

What is claimed is:

1. A method for restoring bulkiness of nonwoven fabric which contains crimped thermoplastic fiber and is in a roll form, which comprises:
unwinding the nonwoven fabric in a roll form and
blowing hot air to the unwound nonwoven fabric for from about 0.05 to 3 seconds, by a through-air technique, thereby increasing the bulkiness of the nonwoven fabric, wherein the hot air has a temperature lower than the melting point of the thermoplastic fiber and not lower than a temperature lower than the melting point by about 50°C.
2. The method according to claim 1, which further comprises cooling the hot air-heated nonwoven fabric by blowing cool air to the nonwoven fabric by a through-air technique immediately after the hot air blowing, the temperature of the cool air being 50°C or lower, the velocity of the cool air being from about 1 to 10 m/sec and the blowing time being about 0.01 second or longer, or
by spontaneous cooling after the hot air blowing.
3. The method according to claim 1, wherein the nonwoven fabric is produced by a through-air method.
4. The method according to claim 1, wherein the nonwoven fabric has a multilayer structure composed of at least two layers and contains the crimped thermoplastic fiber in an outermost layer thereof.
5. The method according to claim 4, wherein the nonwoven fabric contains heat shrinkable fiber in a layer other than the outermost layer containing the crimped thermoplastic fiber.
6. The method according to claim 2, wherein the nonwoven fabric is suppressed from shrinking in the width direction thereof so that the width of the nonwoven fabric after the cool air blowing is about 95% or more of the width of the nonwoven fabric before the hot air blowing.

7. The method according to claim 1, wherein the crimped thermoplastic fiber has a fineness of from about 1.1 to 11 dtex.
8. A process of producing a nonwoven fabric comprising:
preparing a nonwoven fabric containing crimped thermoplastic fiber by a prescribed process and winding the nonwoven fabric into a stock roll,
unwinding the nonwoven fabric from the stock roll, and
blowing hot air for from about 0.05 to 3 seconds to the unwound nonwoven fabric by a through-air technique thereby increasing the bulkiness of the nonwoven fabric, wherein the hot air has a temperature lower than the melting point of the thermoplastic fiber and not lower than a temperature lower than that melting point by about 50°C.
9. A process of producing an absorbent article comprising a liquid permeable topsheet, a liquid impermeable backsheet, and a liquid retentive absorbent member interposed between the topsheet and the backsheet,
the topsheet being made of nonwoven fabric which contains crimped thermoplastic fiber and has been wound into a stock roll before being fabricated into the absorbent article,
which process includes the steps of:
unwinding the nonwoven fabric from the stock roll and
blowing hot air for from about 0.05 to 3 seconds to the unwound nonwoven fabric by a through-air technique thereby increasing the bulkiness of the nonwoven fabric, wherein the hot air has a temperature lower than the melting point of the thermoplastic fiber and not lower than a temperature lower than that melting point by about 50°C.
10. A process of producing an absorbent article comprising a liquid permeable topsheet, a liquid impermeable backsheet, a liquid retentive absorbent member interposed between the topsheet and the backsheet, and an intermediate sheet interposed between the topsheet and the absorbent member,
at least one of the topsheet and the intermediate sheet being made of a nonwoven fabric which contains crimped thermoplastic fiber and has been wound into a stock roll before being fabricated into the absorbent article,

which process includes the steps of:

unwinding the nonwoven fabric from the stock roll and

blowing hot air for from about 0.05 to 3 seconds to the unwound nonwoven fabric by a through-air technique thereby increasing the bulkiness of the nonwoven fabric, wherein the hot air has a temperature lower than the melting point of the thermoplastic fiber and not lower than a temperature lower than that melting point by about 50°C.

11. The process of producing an absorbent article according to claim 9, which further includes the step of:

cooling the hot air-heated nonwoven fabric by blowing cool air to the nonwoven fabric by a through-air technique immediately after the hot air blowing, the temperature of the cool air being about 50°C or lower, the velocity of the cool air being from about 1 to 10 m/sec and the blowing time being from about 0.01 second or longer, or by spontaneous cooling after the hot air blowing, and then

packaging the absorbent article after cooling.

12. The process of producing an absorbent article according to claim 9, which further includes the step of:

cooling the hot air-heated nonwoven fabric by blowing cool air to the nonwoven fabric by a through-air technique immediately after the hot air blowing, the temperature of the cool air being about 50°C or lower, the velocity of the cool air being from about 1 to 10 m/sec and the blowing time being from about 0.01 second or longer, or by spontaneous cooling after the hot air blowing, and then

packaging the absorbent article after cooling.

13. A nonwoven fabric produced by unwinding a nonwoven fabric containing crimped thermoplastic fiber from a stock roll and blowing hot air for from about 0.05 to 3 seconds to the unwound nonwoven fabric by a through-air technique thereby increasing the bulkiness of the nonwoven fabric, wherein the hot air having a temperature lower than the melting point of the thermoplastic fiber and not lower than a temperature lower than that melting point by about 50°C.

14. A method for restoring bulkiness of nonwoven fabric which contains crimped

thermoplastic fiber and is in a roll form while the nonwoven fabric is unwound and transferred, the method comprising:

heating the unwound nonwoven fabric while the nonwoven fabric is being transferred at a heating temperature lower than the melting point of the thermoplastic fiber and not lower than a temperature lower than the melting point by about 50°C, and

transferring the heated nonwoven fabric at a speed lower than the transfer speed during the heating thereby to make the nonwoven fabric increase in bulkiness.

15. The method according to claim 14, wherein the heated nonwoven fabric is transferred under a tension lower than the tension imposed to the nonwoven fabric being heated.

16. The method according to claim 14, wherein the heating is carried out by blowing hot air heated to the heating temperature of the nonwoven fabric or bringing the nonwoven fabric into contact with a roll heated to the heating temperature with a wrap.

17. The method according to claim 16, wherein the heating is carried out by blowing hot air heated to the heating temperature to the nonwoven fabric by a through-air technique.

18. The method according to claim 16, wherein the heating and the transferring are carried out by using a bulkiness restoring apparatus comprising an unwinding unit for unwinding the nonwoven fabric from a stock roll, a hot air blowing unit placed downstream of the unwinding unit, and a pair of nip rolls placed downstream of the hot air blowing unit, and

the rotation speed of the nip rolls being lower than the nonwoven fabric transfer speed in the hot air blowing unit.

19. The method according to claim 16, wherein the hot air is blown for from about 0.05 to 3 seconds.

20. The method according to claim 14, wherein the nonwoven fabric has a

multilayer structure composed of at least two layers and contains the crimped thermoplastic fiber in an outermost layer thereof, and the nonwoven fabric is heated from the outermost layer side thereof.

21. A process of producing an absorbent article comprising a liquid permeable topsheet, a liquid impermeable backsheet, and a liquid retentive absorbent member interposed between the topsheet and the backsheet,

the topsheet being made of a nonwoven fabric which contains crimped thermoplastic fiber and has been wound into a stock roll before being fabricated into the absorbent article,

which process includes the steps of:

unwinding and transferring the nonwoven fabric from a stock roll,

heating the unwound nonwoven fabric while the nonwoven fabric is being transferred at a temperature lower than the melting point of the thermoplastic fiber and not lower than a temperature lower than that melting point by about 50°C, and

transferring the heated nonwoven fabric at a speed lower than the transfer speed during the heating thereby to make the nonwoven fabric increase in bulkiness.